CLAIMS

What is claimed is:

1. A method comprising:

inserting a delay sequence of data values into an output data sequence of data values, a portion of the output data sequence following the delay sequence being the same as a corresponding portion of an input sequence of decoded data obtained from a speech decoder, the input sequence having at least one distorted non-voice sequence representing a non-voice signal; and

inserting a substantially undistorted non-voice sequence into the output sequence, the undistorted sequence being at least of substantially the same length as the distorted sequence, a portion of the output sequence following the undistorted sequence being the same as a corresponding portion of the input sequence, the output sequence being substantially free of the distorted non-voice sequence.

2. The method of claim 1 wherein the undistorted non-voice sequence comprises a sequence of dual tone multiple frequency (DTMF) signal values.

3. The method of claim 1 wherein the substantially undistorted non-voice sequence comprises a regenerated non-voice sequence that matches the non-voice signal.

4. The method of claim 1 further comprising processing the output sequence to identify the undistorted sequence as representing a DTMF digit.

5. A method comprising:

inserting a first delay sequence of data values into an output data sequence of data values, a portion of the output data sequence following the first delay sequence

being the same as a corresponding portion of an input sequence of decoded data obtained from a decoder that operates according to a speech coding/decoding process, the input sequence having at least one distorted non-voice sequence representing a non-voice signal;

inserting a second delay sequence into the output data sequence in response to determining that the non-voice signal is likely to be in the input sequence, based on values associated with the input sequence and the speech coding/decoding process, a portion of the output data sequence prior to the second delay sequence being the same as a corresponding portion of the input sequence; and

inserting a substantially undistorted non-voice sequence into the output sequence following the second delay sequence, the undistorted sequence being at least of substantially the same length as the distorted sequence, a portion of the output sequence following the undistorted sequence being the same as a corresponding portion of the input sequence.

6. The method of claim 5 wherein the undistorted non-voice sequence comprises a sequence of dual tone multiple frequency (DTMF) signal values.

7. The method of claim 5 wherein the undistorted non-voice sequence comprises a regenerated non-voice sequence that matches the non-voice signal.

8. The method of claim 5 wherein the second delay sequence is longer in time than the first delay sequence.

9. The method of claim 5 wherein the values comprise

a plurality of linear prediction coding (LPC) parameters received by the decoder and associated with the input sequence.

10. The method of claim 5 further comprising

processing the output sequence to identify the undistorted sequence as representing a DTMF digit.

11. An apparatus comprising:

buffer having an input to receive a sequence of decoded data having a non-voice signal and speech therein and a first buffer output that provides the decoded data in a first in first out manner;

signal processor having an input to receive the decoded data and a processor output that provides a sequence of regenerated data representing a regenerated non-voice signal, the processor generates an A select signal in response to identifying the non-voice signal in the sequence of decoded data; and

multiplexer A having a first input coupled to the first buffer output to receive the decoded data, a second input coupled to the processor output to receive the regenerated data, and a multiplexer A output that provides data from the second input in response to the A select signal.

12. The apparatus of claim 11 wherein the non-voice signal comprises a tone signal.

13. The apparatus of claim 11 wherein the regenerated non-voice signal matches the non-voice signal.

14. The apparatus of claim 11 wherein the buffer comprises a first FIFO buffer portion and a second FIFO buffer portion in series therewith that receive the decoded data from the decoder, the apparatus further comprising:

predictor that determines whether the non-voice signal is likely to be in the sequence of decoded data based on values associated with the sequence of decoded data and representing characteristics of a speech coding/decoding process used to generate the decoded data; and

multiplexer B having a first input coupled to the decoder, a second input coupled to an output of the second buffer portion, and an output coupled to the first input of the multiplexer A, the multiplexer B provides data at its output from its second input in response to the B select signal.

15. A repeater comprising:

means for storing an input sequence of decoded data having a non-voice signal and speech therein, in a first in first out manner;

means for providing a sequence of regenerated data representing a regenerated non-voice signal matching said non-voice signal;

means for providing an output sequence being a delayed version of the input sequence; and

means for providing the sequence of regenerated data as part of the output sequence in response to identifying the non-voice signal in the input sequence.

16. The repeater of claim 15 further comprising:

means for inserting a second delay sequence into the output data sequence in response to determining that the non-voice signal is likely to be in the input sequence, based on values associated with the input sequence and the speech coding/decoding process.

17. The repeater of claim 15 wherein the non-voice signal comprises a DTMF signal.

18. The repeater of claim 15 wherein the values representing characteristics of the speech coding process comprise linear prediction coding (LPC) parameters.

19. The repeater of claim 15 further comprising means for decoding a plurality of encoded packets into said sequence of decoded data according to a speech coding/decoding process.

20. An article comprising:

a machine-readable medium having instructions which when executed by a processor provide a sequence of regenerated data representing a regenerated non-voice signal that replaces a distorted non-voice signal in a sequence of decoded data from a speech decoder.

21. A method comprising:

detecting a non-voice signal in a sequence of decoded data; and

replacing distorted non-voice data in the sequence with regenerated non-voice data representing the non-voice signal.

22. The method of claim 21 further comprising after replacing the distorted non-voice data:

detecting the non-voice signal in the sequence based on the regenerated data.

23. The method of claim 21 wherein the non-voice signal is a DTMF signal.